

ABSTRACT

The present invention provides for the selective covalent modification of nucleic acids with redox active moieties such as transition metal complexes. Electron 5 donor and electron acceptor moieties are covalently bound to the ribose-phosphate backbone of a nucleic acid at predetermined positions. The resulting complexes represent a series of new derivatives that are bimolecular templates capable of transferring electrons 10 over very large distances at extremely fast rates. These complexes possess unique structural features which enable the use of an entirely new class of bioconductors and photoactive probes.